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EXAMINER	
MAKI, STEVEN D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,357	CESARINI ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-62 and 111-158* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-62 and 111-158* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) Claims 39-62 are objected to because of the following informalities: The amendment filed 2-2-06 uses the claim identifier "(previously presented)" for claims 39 and 58 and applicant makes arguments directed to the groove terminating at "a location between the equatorial plane and the sidewall opposite said one of the shoulder zone" (page 33 of response filed 2-2-06). However, the text of claims 39 and 58 in the amendment filed 2-2-06 omits the subject matter (the terminating location) added to claims 39 and 58 by the amendment filed 7-14-05. Appropriate correction is required.

2) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3) Claims 135-158 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 135 and 154, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the subject matter of "a substantial part" of stresses imparted to the substantially-continuous tread portions are discharged along the axis. The original disclosure supports discharging "the stresses" imparted to the substantially continuous portions. However, the original specification fails to support the subject

matter of a substantial part of the stresses being so discharged. The original disclosure, which fails to provide explicit basis for "substantial part", fails to quantify how much (e.g. what percentage) of the stresses absorbed by the substantially continuous portions are discharged along the axis.

Applicant refers to page 11 lines 19-22 for support. The disclosure at page 11 lines 19-22 is directed to the subject matter of a central depression not changing the reaction of the tread pattern instead of a "substantial part" of stresses imparted to the substantially continuous tread portions being discharged along the axis.

4) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5) Claims 135-158 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 135 and 154, the description of a "substantial part" of stresses imparted to the substantially-continuous tread portions being discharged along the axis is ambiguous. In particular, the scope and meaning of "substantial part" is ambiguous. In is unclear how much (e.g. what percentage) of the stresses imparted to the portions is required to constitute "substantial part".

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Hoover

7) **Claims 135-141, 146, 149, 152 and 153 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoover (US 2011552) in view of Madec et al (US 4446902).**

Hoover discloses a pneumatic tractor tire having a tread comprising only alternating groups of inclined grooves having constant width such that the tread has "substantially continuous tread portions" (ribs 11, 11a) as claimed. See figures 1 and 2. Since Hoover's tread is for a tractor tire ("large tire" with "large lugs"), a "substantial part" of stressing imparted to the ribs 11, 11a during rolling are discharged along the axis as claimed. Hoover does not recite a carcass structure and belt structure. However, it would have been obvious to one of ordinary skill in the art to provide Hoover's pneumatic tractor tire with a carcass structure and belt such that the tire has a curvature ratio of not greater than 0.1 since (1) Hoover's tire is a tractor tire instead of a motorcycle tire) and (2) Madec et al suggests providing a pneumatic agricultural tire with a low median curvature for the tread lugs, a carcass and belt to improve performance and endurance.

Japan 408

8) **Claims 39-53, 55-58, 61-62, 111-125, 127-130, 133-149, 151-154 and 157-158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 408 (JP 4-154408) in view of Great Britain 472 (GB 2224472), Japan 109 (JP 6-247109) and the admitted prior art (specification page 3 lines 1-5) and optionally Sommer (US 2104532).**

Japan 408 discloses a pneumatic tire having a (rubber) tread having a tread contact width and comprising alternating groups of slant transverse grooves 4 extending from shoulder zones and into an equatorial zone wherein substantially continuous tread portions are defined by the slant transverse grooves. The pneumatic tire is a low aspect ratio radial tire having a size such as 225/50R16 (aspect ratio = 50%). See bottom right on page 3 of Japan 408. Also, see translation for Japan 408. The tire has good water drainage and reduced noise. The tire also prevents wandering phenomenon. As can be seen from figure 2, the substantially continuous tread portions are wider than the slant transverse grooves, each transverse groove has a straight uniform width equatorial groove portion, and the longest transverse groove extends across the equatorial plane. A zigzag circumferential groove (the only circumferential groove illustrated) extends through the center area of the tread. In each group, slant grooves (**some of which cross the EP**) terminate at the zigzag circumferential groove (instead of a zigzag central web). The substantially continuous tread portions on one side of the tire are not connected to the substantially continuous tread portions on the other side of the tire.

As to claim 111, it would have been obvious to one of ordinary skill in the art to connect the tread portions on one side of the directional tread of Japan 408's pneumatic radial tire having good water drainage to the tread portions on the other side of the tire so as to form a structurally stiff grid having slant grooves but no circumferential grooves (each substantially-continuous tread portion thereby ending at an equatorial groove

portion of a same transversal groove of an axially-opposed group of transversal grooves) since:

(1) Great Britain 472, directed to a pneumatic radial tire having *high degree of water drainage* (page 3 line 27) suggests forming tread portions defined between slant grooves of a directional (rubber) tread of a pneumatic radial tire such that the tread portions (rib profiles) on one side of the tire are connected to the tread portions (rib profiles) on the other side of the tire so as to form a herringbone-like profiling which is continuous from the center of the tread surface to the open shoulders of the tire *so that the profile has very low development of noise (page 4 lines 1-4) and relatively high absorption of lateral forces and non-deformability of shape as required when traveling rapidly round bends (page 4 lines 13-20)*; and

(2) Japan 109, directed to a pneumatic radial tire having *low noise and good water drainage* (abstract, paragraphs 19-24 of machine translation), suggests connecting substantially continuous tread portions on one side of the tire to substantially continuous tread portions on the other side of the tire in a directional (rubber) tread having slant grooves and no circumferential grooves wherein *some of the slant grooves cross the EP* (figure 1); and optionally

(3) Sommer shows a directional (rubber) tire tread having alternating groups of slant grooves (*some of which cross the EP* as shown in figure 8) and no circumferential grooves in which tread portions on one side of the tire are connected to tread portions on the other side of the tire.

Hence, Great Britain 472 and Japan 109 motivate one of ordinary skill in the art to connect the tread portions on one side of Japan 408's directional tire to the tread portions on the other side of the tire such that the resulting tread, which contains no circumferential grooves, has low noise and relatively high absorption of lateral forces and non-deformability of shape required when traveling rapidly round bends in addition to good water drainage.

It is acknowledged that Great Britain 472 teaches locating the beginnings of the slant grooves in the region of the center line so that large amounts of water are conducted to the shoulder in an unhindered manner over the shortest path. However, Japan 408 and Japan 109 teach obtaining good drainage even when some of the slant grooves cross the EP. See figure 2 of Japan 408 and figure 1 of Japan 109. Moreover, Japan 109 shows extending some of the slant grooves across the EP even when the tread portions on one side are connected to tread portions on the other side such that the directional tread has no circumferential grooves.

As to tire construction, note that Japan 408's teaching that the tire is a pneumatic radial tire having a size such as 225/50R16. In any event: it would have been obvious to one of ordinary skill in the art to provide Japan 408's pneumatic radial tire with the claimed tire construction (i.e. carcass, sidewalls, beads, belt) since Great Britain '472 teaches that a pneumatic radial tire has a carcass, sidewalls, belt and beads (see figure 1, page 5 lines 30-34).

Japan 408 is silent as to curvature ratio. The limitation of the tire having a curvature ratio not greater than 0.1 would have been obvious since (1) Japan 408 teach

that the tire, which is illustrated as having a relatively flat tread (figure 3) may have a size such as 225/50R16, which one of ordinary skill in the art would readily understand as being a car size tire and (2) the admitted prior art teaches that the curvature ratio of a conventional tire for motor vehicles (in contrast to motorcycle tires) has a value equal to about 0.05 and in any case is never higher than 0.1 (specification, page 3 lines 1-7).

As to claim 112, Japan 408's slant grooves may be inclined at 20 degrees with respect to the equatorial plane of the tire. See abstract.

As to claims 113-116 and 128-129, see Japan 408's slant grooves.

As to claim 117, see Japan 408's pitched tread pattern in which the slant grooves end at a relatively short distance from the same slant groove of an axially opposed group. Also, note the suggestion from Great Britain 472 and Japan 109 to connect Japan 408's tread portions on one side to the tread portions on the other side - the resulting zigzag central web separating the end of a slant from the same slant groove of an axially opposed group.

As to claim 118, the claimed radius of curvature would have been obvious in view of Japan 408's teaching to connect the steeply inclined part of the slant groove to the gently inclined part of the slant groove with a curved portion.

As to claim 119, the claimed angle for the shoulder groove portion would have been obvious in view of Japan 408, Great Britain 472 and Japan 109's teaching to incline the portion of the slant groove in the shoulder at a relatively large angle.

As to claims 120 and 124, the claimed transversal groove width and depth would have been obvious and could have been determined without undue experimentation in

view of Japan 408, Great Britain 472 and Japan 109's teaching to use the slant grooves to discharge water to the shoulders of the tread.

As to claim 121, it would have been obvious to narrow the inclined slant grooves in the shoulder zones to the claimed width of 40-60% since Japan '109 teaches that the narrow width branching groove may have a width of 40% of the inclined grooves to secure block rigidity and decrease noise.

As to claim 122, see figure 2 of Japan 408, which shows the ground contact width of the tread.

As to claim 123, Japan 408 suggests using plural slant grooves in each group.

As to claim 125, note staggering of the groups of transverse grooves shown by Japan 408.

As to claim 127, it would have been obvious to add the claimed transverse notches in Japan 408's tread since Great Britain '472 suggests adding short blind grooves (notches) 48, 58 between inclined grooves to the shoulder zones of a tread.

As to claims 130 and 133-134, one of ordinary skill in the art would readily understand Japan 408 as teaching providing a set of front tire and rear tires since 225/50R16 is a car size tire. The claimed number of transversal grooves in each group would have been obvious in view of Japan 408's teaching to use plural slant grooves in each group.

As to claims 39-53, 55-58 and 61-62, it would have it would have been obvious to narrow Japan 408's inclined slant grooves in the shoulder zones since Japan '109 teaches that the narrow width branching groove may have a width of 40% of the inclined

grooves to secure block rigidity and decrease noise. Also, note comments on claims 111-125, 127-129 and claims 130,133-134.

As to claims 135-149, 151-154, 157-158, note Great Britain 472's teaching to connect so that the resulting profile has relatively high absorption of lateral forces and non-deformability of shape. With specific reference to claims 135 and 154, it would have been obvious to provide Japan 408's tread without circumferential grooves such that during rolling, a "substantial part" of the stresses imparted to the tread portions between the grooves 4 are discharged along the axis since (1) Japan 408 teaches using groups of inclined grooves 4 instead of circumferential grooves in a directional tread and (2) Great Britain 472, also disclosing a directional tread with no circumferential grooves, teaches connecting the tread portions (rib profile elements) between inclined grooves in a herringbone-like manner such that a profile is achieved which has a relatively high absorption of lateral forces and non-deformability of shape.

9) **Claims 60, 132 and 156 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 408 in view of Great Britain 472, Japan 109 and admitted prior art and optionally Sommer as applied above and further in view of Europe '851 (EP 722851).**

As to claims 60, 132 and 156, it would have been obvious to provide Japan 408's tires as a set of front tires and a set of different rear tires with different chords (different tire section widths / different tread widths) as claimed in view of Europe '851's suggestion to use different front and rear tires wherein each of those tires comprises inclined grooves but no circumferential grooves.

Sommer

10) **Claims 39-53, 55-58, 111-125, 127-130, 135-149 and 151-154 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (US 2104532) in view of Great Britain '472 (GB 2224472), the admitted prior art (specification page 3 lines 1-5) and optionally at least one of Hargraves (US 1996418) and Japan '109 (JP 6-247109).**

Sommer, directed to preventing sliding of a tire on a wet road, discloses a pneumatic vehicle tire (automobile tire) having a tread comprising repeating groups of four inclined transversal grooves of different lengths wherein the groups of inclined transversal grooves on one side of the center plane of the tire alternate with the groups of inclined transversal grooves on the other side so that a zigzag strip (zigzag rib) exists at the center plane of the tire. See figure 8, figure 8a and page 3 lines 17. Sommer states that the "tread of Figs. 8 and 8a has only slanting grooves 51 and ribs 53 running from the sides of the tire to its center plane in opposite directions " (page 3 lines 1-3). Accordingly, the tread has no circumferential grooves. The width of the grooves is ¼ to 5 mm. The width of the ribs (land portions between the grooves) is 3-10 mm. For example, the groove may have a width of 5 mm and the rib may have a width of 10 mm - the ribs thereby being wider than the grooves. See page 1 right column line 51 to page 2 left column lines 1-15. Sommer does not specifically recite that the tire has a carcass, belt and beads.

As to claims 39, 111 and 135, it would have been obvious to one of ordinary skill in the art to provide the automobile tire of Sommer with the claimed tire construction (i.e.

carcass, sidewalls, beads, belt) since Great Britain '472, also disclosing a tire tread having inclined grooves but no circumferential grooves, teaches using such a tread in a vehicle tire having a carcass, sidewalls, belt and beads (see figure 1, page 5 lines 30-34). The limitation of the tire having a curvature ratio not greater than 0.1 would have been obvious since (1) Sommer, which teaches that the tread may be used for an automobile, shows the profile of the tread as defining a relatively small curvature ratio (see figure 1), (2) Great Britain '472, which teaches that the tread may be used for a vehicle, shows the profile of the tread as defining a relatively small curvature ratio (see figure 1) and (3) the admitted prior art teaches that the curvature ratio of a conventional tire for motor vehicles (in contrast to motorcycle tires) has a value equal to about 0.05 and in any case is never higher than 0.1 (specification, page 3 lines 1-7).

In claim 39, the claimed subject matter of "wherein each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves, wherein each of the transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves so that all of the transversal grooves end within the equatorial zone" and the added subject matter at lines 27-30 of claim 39 (see amendment filed 7-14-05) reads on the arrangement of inclined transversal grooves shown by Sommers in figures 8 and 8a. In any event: it would have been obvious to one of ordinary skill in the art to arrange Sommers' inclined transversal grooves of differing lengths such that the longest groove of each group crosses the EP and the end of each inclined transversal groove of one group on one

side of the tread is spaced the same distance from the longest inclined transversal groove of the group on the other side of the tread since Hargraves suggests arranging alternating groups of blind inclined transversal grooves of differing lengths in a tread for an automobile such that each blind inclined transversal groove ends at the same predetermined distance from an axially opposed longest inclined transversal groove for the advantage of giving sufficient traction, resisting skiding in all directions and reducing noise.

As to claim 111, "structurally stiff grid" reads on the profiling shown by Somers in figures 8, 8a; "structurally stiff" being a relative expression failing to define a stiffness different from that disclosed by Sommers.

As to claim 135, "[a substantial part of] stresses imparted to the substantially-continuous portions are discharged along the axis" fails to define tread portions different from that disclosed by Sommer; it being noted that (1) at least part of stresses under at least one rolling condition must be discharged as claimed when Sommer's tire rolls and (2) claim 135 fails to require 99% of all stresses absorbed by the portions during any rolling condition be discharged along the axis.

As to claims 39, and 135, Sommer's grooves have uniform width. In any event: it would have been obvious to one of ordinary skill in the art to provide Sommer's transversal grooves, which are for preventing sliding on a wet road (page 1 lines 10-12), such that "the equatorial groove portion of each transversal groove has a uniform width" and "the shoulder groove portion of each transverse groove has at least a portion having a width smaller than the width of the equatorial groove portion" since Japan '109,

also directed to a tire having inclined grooves but no circumferential grooves, teaches providing inclined grooves in an equatorial zone with a uniform width and providing branching grooves in the shoulder zones with a smaller width than the inclined grooves in the equatorial zone portion in order to obtain high wet performance and low noise. Hence, Sommer and Japan '109 are both directed to a directional tread pattern having inclined grooves for preventing slipping on wet roads wherein the inclined grooves on one side are shifted relative to the inclined grooves on the other side. See figure 8, 8a of Sommer and figures 1-3 of Japan '109. Japan '109 suggests improving such a directional tread pattern by using branching grooves having a narrower width and a larger angle of inclination to the EP than that for the inclined grooves. The improvement includes reducing noise. See for example paragraph 26 of the machine translation of Japan '109. The combination of a branch groove 3 and an inclined groove 2 constitutes a transversal groove. With respect to figures 1-3 of Japan '109, uniform width inclined grooves 2 in figures 1 and 2 are an alternative to varying width inclined grooves in figure 2. The tread patterns of figures 1 and 2 are asymmetric tread patterns. Japan '109 teaches that the tread pattern may be symmetric instead of asymmetric. See paragraph 12 of machine translation for Japan '109 and figure 2 of Japan '109.

As to claim 40, Sommer's inclined transversal grooves are inclined at angle of more than 45 degrees.

Claim 41 fails to define a tread pattern different from that shown by Sommers and suggested by the optional Hargraves.

As to claims 42-44, Sommer suggests straight and parallel inclined transversal grooves and Japan '109 suggests straight and parallel inclined grooves.

As to claim 45, Sommer and the optional Hargraves suggest ending the inclined grooves close the longest groove of the group on the other side of the tire.

As to claims 46-47, it would have been obvious to shape the inclined grooves of Sommers such that the shoulder portion is less steeply inclined and connected via a curved groove portion with the equatorial zone portion of the inclined groove in view of (1) Japan '109's teaching to incline the narrow branching groove of the inclined groove 2 at a larger angle with respect to the EP and (2) Great Britain '472's teaching to increase the inclination of inclined grooves in shoulder zones of the tire as shown in figure 2 to provide a good non-skid facility, etc while maintaining open drainage paths. Hence, Japan '109 and Great Britain '472 motivate one of ordinary skill in the art to configure Sommer's transversal grooves so as to have a shallow inclined portion and a steeply inclined portion.

As to claim 48, Sommers teaches a groove width of 5 mm.

As to claims 49-50, it would have been obvious to narrow the inclined transversal grooves in the shoulder zones to the claimed width of 40-60% since Japan '109 teaches that the narrow width branching groove may have a width of 40% of the inclined grooves.

As to claim 51, Sommers shows four inclined grooves.

As to claim 52, Sommers teaches a groove depth of 6 mm.

As to claim 53, it would have been obvious to longitudinally stagger by about 50% of a mean pitch since Sommers and the optional Hargraves show circumferentially shifting one group of grooves relative to another group of grooves.

As to claim 55, it would have been obvious to add the claimed transverse notches in Sommer's tread since Great Britain '472 suggests adding short blind grooves (notches) 48, 58 between inclined grooves to the shoulder zones of a tread, which like that of Sommers has no circumferential grooves.

As to claim 56, Sommer's inclined grooves have the claimed decreasing length.

Claim 57 fails to define a tread pattern different from that shown by Sommers and suggested by the optional Hargraves.

As to claim 58, one of ordinary skill in the art would readily understand Sommer as teaching providing a set of front tire and rear tires having the tread pattern of figures 8, 8a since Sommer's teaches using the tire on an automobile. As to 3-5 (front) and 5-7 (rear), it would have been obvious to use five inclined grooves in each group since (1) Sommer's suggests using plural (i.e. four) inclined grooves in each group and optionally (2) Hargraves shows using five inclined grooves in a group.

As to the remaining claims, note comments on above specifically noted claims. With respect to claims 112 and 136, for example, see comments on claim 40.

11) **Claims 54, 126 and 150 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer in view of Great Britain '472, the admitted prior art and optionally at least one of Hargraves and Japan 109 as applied above and further in view of Europe '270 (EP 565270).**

As to claims 54, 126 and 150, it would have been obvious to add the claimed longitudinal slots to Sommer's tread since (1) Sommers teaches that the tread may also comprise circumferential grooves (figure 9) and (2) Europe '270 suggests adding circumferential grooves 3, 3, which cross inclined grooves, between the shoulder zone and equatorial zone to improve resistance to hydroplaning.

12) **Claims 59-62, 131-134 and 155-158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer in view of Great Britain '472, the admitted prior art and optionally at least one of Hargraves and Japan 109 as applied above and further in view of Europe '851 (EP 722851).**

As to claims 59-62, 131-134 and 155-158, it would have been obvious to provide the front and rear tires of Sommers as a set of front tires and a set of different rear tires as claimed in view of Europe '851's suggestion to use different front and rear tires wherein each of those tires comprises inclined grooves but no circumferential grooves.

Allowable Subject Matter

13) Claims 59, 131 and 155 would be allowable if (1) each of claims 59, 131 and 155 is rewritten include all of the limitations of the base claim and any intervening claims, (2) for each tire, each of claims 59, 131 and 155 is amended by adding --wherein the shoulder groove portion of each transversal groove has at least a portion having a width smaller than the width of the equatorial groove portion--, (3) for each tire, each of claims 59, 131 and 155 are amended by adding --wherein the equatorial groove portion of each transversal groove is connected to the shoulder groove portion by a substantially curvilinear intermediate groove portion comprising a radius of curvature greater than or equal to 30 mm and less than or equal to 60 mm-- and (4) claim 155 is amended to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action.

Claims 39, 41-45 and 47-57 would be allowable if the following amendments are made: (1) Cancel claims 40 and 46; (2) In claim 39, add --wherein the equatorial groove portion of each transversal groove is connected to the shoulder groove portion by a substantially curvilinear intermediate groove portion comprising a radius of curvature greater than or equal to 30 mm and less than or equal to 60 mm--; and (3) In claim 39, add --wherein the equatorial groove portion of at least one of the transverse grooves

forms a first angle greater than 30° and less than or equal to 65° with respect to the equatorial plane of the tire--.

The subject matter regarding the first angle in the proposed wherein clause is reasonably conveyed by the original disclosure at page 6 lines 5-9.

When considered as a whole, the prior art fails to suggest the combination of (1) alternating groups of the transversal grooves, (2) "the shoulder groove portion of each transversal groove has at least a portion having a width smaller than the width of the equatorial groove portion", (3) "the equatorial groove portion of each transversal groove being connected to the shoulder groove portion by a substantially curvilinear intermediate groove portion comprising a radius of curvature greater than or equal to 30 mm and less than or equal to 60 mm" and (4) "the equatorial groove portion of at least one of the transverse grooves forming a first angle greater than 30° and less than or equal to 65° with respect to the equatorial plane of the tire" (or "the equatorial groove portion of one or more of the transversal grooves of at least one of the first treads forms a third angle substantially equal to 45° with respect to the equatorial plane of the respective front tire") taken together with the remaining limitations of claim 39.

Remarks

14) Applicant's arguments filed 2-2-06 have been fully considered but they are not persuasive.

Applicant argues that (1) the claimed invention is designed to withstand the presence of extreme stresses, (2) the substantially continuous tread portions can absorb all the thermal mechanical stresses imparted to the tread during rolling without bending or deforming too much, (3) the thermal mechanical degradation phenomena of

the elastomeric portions in the presence of extreme stresses is allowed to maintain substantially constant performance. This argument is not commensurate in scope with the claims because none of the claims require of the above noted subject matter.

Great Britain

Applicant argues: "... the key issue is not whether the tread portions on one side of the tread are 'connected' to the tread portions on the other side of the tread but, rather, whether or not the substantially continuous tread portions are mutually 'fitted in with one another'". With respect to "fitted in with one another", the original specification discloses obtaining this construction by omitting circumferential grooves and Great Britain 472 and Japan 109 provide ample motivation to omit all circumferential grooves. It is emphasized that Great Britain 472 teaches that "a profile is achieved which has a relatively high absorption of lateral forces and non-deformability of shape, which is required, for example, when traveling rapidly round bends. The general driving and steering behaviour is very precise."

Applicant argues that the proposed modification of Japan 408 would change the principal of operation of the reference. Applicant is incorrect since Japan 408 teaches diagonally extending continuous parallel grooves 4 from the center region to the shoulder regions instead of using straight circumferential grooves and this invention of Japan 408 is not being modified. It is emphasized that Japan 408 attaches no importance and criticality to making the grooves 4 form wave shaped grooves 7 that cross the centerline in a zigzag manner.

With respect to Great Britain 472, applicant refers to "the different object of maintaining substantially constant, independent of the wear conditions of the tread, the performances in general of a high performance tire, and in particular, its grip on dry ground." No unexpected results over the applied prior art commensurate in scope with the claims has been shown.

Applicant argues that Great Britain 472 fails to teach substantially continuous tread portions which are provided about an axis and that stresses are discharged along the axis. The examiner disagrees. Claims 135 and 154 fail to distinguish over Great Britain 472 by reciting substantially continuous tread portions which are provided about an axis and stresses being discharged along the axis.

Applicant argues that bridging members 18, 19 of Great Britain 472 are "mobile". Attorney arguments cannot take the place of evidence in the record. See MPEP 716.01(c).

Applicant's arguments regarding Japan 109 and the optional Sommer are not persuasive since, like Great Britain 472, Japan 109 and the optional Sommer, suggest forming a directional tread with inclined grooves but no circumferential grooves. It is noted again that applicant obtains the "structurally stiff grid" by omitting circumferential grooves.

Applicant argues that Japan 408's grooves are continuous grooves running from the central portion to both shoulder portions. This argument is not persuasive since each continuous groove 4 extends from the center region to only one shoulder. In other words, each of the continuous grooves 4 one side of the tread shown in figure 2 extends

at angle theta of 10-20 degrees to the central region, but contrary to applicant's argument, fails to continue so as to intersect the tread edge defined by width W on the other side of the tread at the same angle theta of 10-20 degrees. In figure 2, the reference numeral "4" on the upper right indicates one of the continuous grooves. This indicated continuous groove ends at the equatorial plane of the tire instead of the shoulder.

Applicant argues that Japan 109 fails to show each group having its own longest groove as set forth in claims 39 and 58. More properly, each of the groups of Japan 408 has a longest groove 4 that terminates between the equatorial plane and the shoulder.

Sommer

Applicant argues that (1) some of the transversal grooves do not end at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially opposed group of transversal grooves and (2) some of Sommer's substantially continuous tread portions defined between the transversal grooves do not end at an equatorial groove portion of a same transversal groove of an axially opposed group of transversal grooves. Applicant is incorrect. In figures 8 and 8a of Sommer, each of the grooves 5 ends at a distance from the equatorial groove portion of the longest groove 51 of the axially opposed group. None of the independent claims including claims 111 and 135 requires ending at the *same* predetermined distance from the equatorial groove portion of a longest transversal groove of the axially opposed group of transversal grooves. In figures 8 and 8a, each of the ribs 53 between the

grooves 51 of a respective group ends at the same transversal groove (the longest groove 51) of the axially opposed group since there is no groove between the ribs 53 of one group and the longest groove 51 of the axially opposed group. In any event, the optional Hargraves suggests arranging blind transverse inclined grooves such that each blind inclined transverse groove of one group ends at the same distance from the longest groove of an axially opposed group. See figure 5.

Applicant argues that Sommer's teaches using a tread that may be sufficiently deformed and therefore teaches away from using a "structurally stiff grid". This argument is not persuasive since "structurally stiff" is a relative term which fails to require a stiffness greater than that of Sommer's tread. Note for example that each of the independent claims fails to specify a numerical range for the modulus of the tread. As to quantifying the stiffness of the tread, the original disclosure merely states "without ... too much deforming themselves" (page 4 lines 27-30). The claims fail to recite

--without deforming too much--.

It is noted that applicant fails to argue that the ribs in Sommer's figure 8, 8a tread deform along the rib toward the tread edge. In other words, "structurally stiff grid" does not require the grid to be "structurally stiff" in all directions. As a related matter, Sommer's figure 8, 8a must be "structurally stiff" in order to support the weight of the vehicle.

Applicant argues that Sommer's grooves "terminate at the center plane" (page 36 line 1 of response filed 2-2-06). Applicant is incorrect. With respect to page 3 column 1 lines 2-3 and 12-17 and figures 8 and 8a, each group of transverse grooves include a

groove 53 which crosses the center plane. Contrary to applicant's arguments, all of the grooves 51 cannot terminate at the center plane in the figure 8, 8a embodiment of Sommer's. If the grooves 51 terminated at the center plane as argued by applicant, then the formation of a "zigzag" strip / rib as described by Sommer's at page 3 column 1 lines 12-17 would be impossible. Also, note that the figures 8 and 8a illustrate a zigzag stripe / rib and that figures 8 and 8a also illustrate the longest groove crossing the center plane.

Applicant argues that Hargraves discloses a longest groove that terminates in the shoulder. More properly, Hargraves, like Sommer's, teaches alternating groups of blind inclined grooves (inclined grooves having one end terminating between the shoulders) such that the longest blind groove of the group of blind grooves terminates at the same distance from the longest blind groove of an axially opposed group. See figure 2.

With respect to claims 111 and 131, applicant comments "... the structurally stiff grid resulting from the aforementioned mutual fitting of the substantially continuous axially opposed tread portions, allows these portions to absorb without bending nor too much deforming, all the thermal-mechanical stresses imparted thereto during rolling" (pages 37-38 of response filed 2-2-06, emphasis added). With respect to the above comment, applicant acknowledges that the structurally stiff grid deforms. How much does it deform? The specification, but not the claims, describes "not too much". What constitutes "not too much? The specification fails to define "not too much" for example by a specified modulus.

With respect to claims 135 and 154, applicant argues Sommer does not disclose that stresses being imparted to the tread portion, let alone that a substantial part of stresses imparted to the tread are discharged along the axis. In response, Examiner makes the following comment: Stresses must be discharged along the axis in Sommer's figure 8, 8a tire, since Sommer's figure 8, 8a tire, like all tires used on a vehicle, is subjected stresses during rolling and (2) Sommer's figure 8, 8a tire includes alternating groups of transverse grooves but no circumferential grooves.

Applicant argues that the width of the alternating grooves and ribs in the figure 8, 8a tire are disclosed as being sufficiently small so as to trigger the technical effect of allowing deformation of each rubber rib towards the next rib under load such that a sharp projecting edge will always cut into the mud layer. None of the claims exclude deformation of the substantially continuous tread portions toward the next continuous tread portion. None of the claims require a rib width greater than that disclosed by Sommer's.

15) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Steven D. Maki
May 1, 2006

Steven D. Maki 5-1-06
STEVEN D. MAKI
PRIMARY EXAMINER